CHAPTER 1 – OVERVIEW

1.1 Background

The Washington State Department of Transportation (WSDOT) has responsibility for the integrated stewardship of the state's multimodal transportation system. WSDOT's Aviation Division (WSDOT Aviation) supports aeronautical activities and the state's aviation system in the Division's role of advocating for preservation of aviation facilities, safe air transportation, airport capacity to meet demand, and mitigation of environment impacts. The state's ability in meeting this interest is achieved primarily through advocacy and partnership.

Understanding the importance of aviation to the transportation system and economy within the state, WSDOT Aviation has taken a comprehensive approach to aviation system planning to ensure the agency is primed to handle future challenges and opportunities. The Division provides technical resources and uses a cooperative approach to work with public-use airports, communities, planning organizations, and local decision makers to set a policy direction for the aviation system. The objective of providing these resources and this approach is to ensure the viability and adequacy of air transportation for the State and its citizens. Meeting this objective requires planning and WSDOT Aviation continues to plan for its airport system through several programs, including conducting long-term planning such as this Washington Aviation System Plan (WASP) in order to address the challenge of maintaining and improving the statewide aviation system for the future.

1.2 Overview of 2015 WASP

Authorized by Revised Code of Washington (RCW) 47.68, WSDOT's Aviation Division initiated an update of the WASP in 2015 to study the performance and interaction of the state's entire aviation system and the contribution of the individual airports to that system. Together, the airports that comprise the system function as a whole in serving aviation demand, driven by economic and transportation needs.

WSDOT's focus is on the public-use airports in the state that include both publicly owned and privately owned facilities. Over time, airports can change their status going from private use to public use or vice versa, impacting the number of airports considered to be part of the WSDOT system at any point in time. At the outset of the WASP, 136 airports were identified as being open to the public; these airports are analyzed and identified in all subsequent WASP analyses. However, during the course of the study, an additional airport became public use. This change does not affect the WASP's overall findings in terms of future demand, capacity needs, or the policy recommendations.

The State's first Aviation System Plan was adopted in 1973 and has been updated numerous times including in 1993, 1998, 2001, and 2009. **The WASP provides WSDOT with analysis of the system's needs from examining the existing available facilities, to estimating future demand, evaluating future needs, and providing recommended policy direction to support the system's future development.**

The priorities of the WASP are to:

- Identify issues and evaluate impacts to determine needed airport and system improvements
- Develop performance goals and metrics to better meet the aviation needs of communities and the aviation system as a whole
- Serve as an effective decision-making tool for the development of policies and recommendations that will advance Washington's aviation system

There are three main elements of the WASP as depicted in Figure 1-1. The tasks within the elements are described below.

Figure 1-1. Main Elements of Washington Airport System Plan
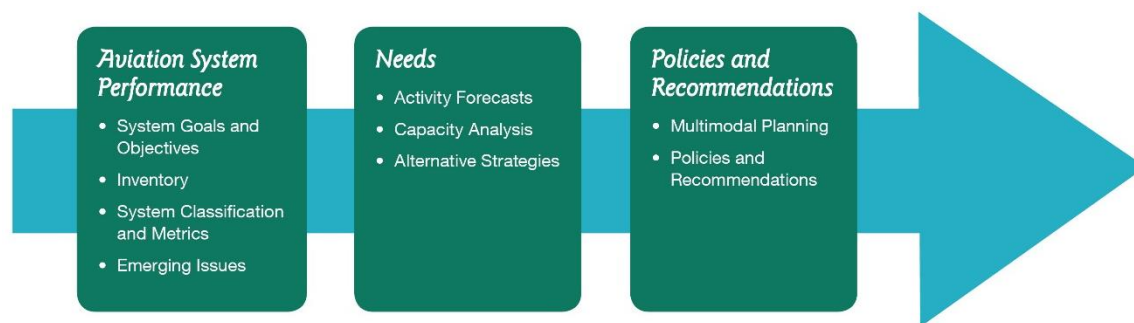
1.2.1 Aviation System Performance

The first element included developing a series of system goals and performance objectives that define what is important for the system and how the goals should be measured and evaluated. To support the measurement of performance, an inventory of the airport system was conducted. The inventory is used to support subsequent analyses of the WASP, providing a baseline of information about the existing system's facilities and its ability to serve demand. The inventory also reviewed the existing multimodal infrastructure in the State and how aviation ties into the overall transportation system.

A key task needed to support evaluation of the system's performance was the update of airport classifications for the Washington system of airports. Airport classifications are used to convey how airports contribute to community and state in terms of functions and activities at airports and measuring the system's performance in achieving the established goals and objectives. Airport metrics were also established that relate the types of activities served within the different airport classifications to minimum standards or recommended minimums. These metrics can help the system work toward target performance levels for the system goals and objectives. The airport metrics provide parameters for airports to understand what is needed to fulfill their roles within the system, increasing the overall system's performance and its ability to better serve the aviation activities that occur throughout Washington.

A series of emerging trends and issues such as the Next Generation Air Transportation System (NextGen), general aviation infrastructure funding challenges, alternative fuels, aerospace manufacturing, and unmanned aerial systems (UAS) were reviewed to determine their potential impact to the system, especially as they relate to their impact on future activities, policies, and infrastructure needs. The emerging issues were considered in subsequent tasks of the WASP including the alternatives analysis and policy recommendations.

Needs

Activity forecasts were developed for each airport for indicators such as operations and based aircraft. Commercial service and air cargo forecasts were also developed, where appropriate, to ensure a comprehensive evaluation of the future demand for aviation activity at the airport, regional, and statewide levels for the three pillars of aviation demand: air cargo, commercial airline service, and general aviation. The forecasts and information gleaned from the emerging issues were compared to the inventory effort to determine future capacity and other infrastructure needs within the system. The capacity analysis provides an understanding of the primary needs to support operational and storage capacity in the state.

Based on the infrastructure needs, a series of alternative strategies were analyzed at the statewide, regional, and airport levels to determine the system's interactions and how to support emerging issues, aviation activities, and capacity needs. These strategies were developed to assist airports in better serving customer needs, increasing revenue, creating a competitive advantage, and enhancing ties to the community served by the airport.

Policies and Recommendations

The airport alternative strategies and airport metrics, along with evaluation of system needs related to achieving the goals and objectives, resulted in development of policy recommendations. Multimodal planning was a key factor in the recommendations process, and recommendations on integrating aviation into statewide planning and practical solutions were developed to support statewide policies.

Throughout the WASP process, community engagement was a key component to ensure a comprehensive and thoughtful evaluation of the needs and impacts was conducted that results in recommendations that support the aviation system and public's best interest. **WSDOT Aviation's mission statement identifies that the organization "fosters the development of aeronautics and the state's aviation system to support sustainable communities and statewide economic vitality".** Stakeholders were provided information through a variety of sources including media releases, websites, social media, newsletters, workshops, and surveys.

1.3 Prior WSDOT Aviation Planning Studies

WSDOT Aviation has a long history of supporting its aviation system and engaging stakeholders through numerous efforts including conducting studies, convening working groups, and promoting aviation outreach and education. WSDOT Aviation understands the value of evaluating needs that help to maintain and improve the preservation of the system and its safety, as well as document the important contributions of the aviation system to the state's transportation and economic activities. Several of the key WSDOT Aviation studies are summarized below.

1.3.1 2009 Long-Term Air Transportation Study

The last statewide system plan for Washington was completed in 2009 as part of the Long-Term Air Transportation Study (LATS). **The LATS initiative was authorized in 2005 by the Washington State Legislature through Engrossed Substitute Senate Bill 5121.** The transportation bill required WSDOT to conduct a study of statewide needs for general aviation and commercial aviation. The purpose was to understand capacity conditions of the time. In addition to the traditional elements of a State Aviation System Plan, LATS examined commercial aviation needs across the State and included four special

emphasis regions identified in the legislation: Tri-cities, Spokane, Puget Sound and Southwest Washington.

LATS identified the statewide air transportation needs and solutions based on demand expectations for a 25-year period. An Aviation Planning Council was established in the third phase of LATS to make policy recommendations to help realize the substantial economic resource present in the aviation system, which was viewed as not properly protected under state laws and was vulnerable to encroachment and a lack of funding. LATS developed a series of recommendations including WSDOT clarifying its role and responsibilities related to the aviation system as the primary steward and advocate. This specifically included providing adequate land use protections, recommending system improvements and strategic investments to support and maintain critical aviation facilities throughout the state, and work as a partner to various stakeholders to aviation.

1.3.2 2012 Aviation Economic Impact Study

The 2012 Aviation Economic Impact Study was intended to provide a broad understanding of the role and contribution of Washington's public use airports to the statewide economy. An update to previous economic impact analysis work conducted as part of the 2001 Aviation Forecast and Economic Analysis Study, and building on other WSDOT planning efforts such as the 2009 LATS/Washington Aviation System Plan (WASP), recommendations of the Washington State Aviation Planning Council, and the development of the Airport Information System (AIS), the 2012 Study also served to establish the types of activities that are accommodated at airports.

Airports create economic output by providing jobs, support of businesses, and access for tourism, but the impacts are not widely recognized, especially how individual airports contribute to local communities both quantitatively and qualitatively. **The study identified 17 aviation-related activities that are supported by the airport system, providing information on the user value of each airport.** The study estimated the total impact attributed to airport-related activity at the 135 public use airports included: 248,500 jobs, $15.3 billion in wages and $50.9 billion in total economic activity. The study also noted that more than $791 million in tax revenue was generated from aviation activities, with over $548 million supporting the State of Washington general fund, while cities, special purpose districts, and counties collected approximately $243 million in tax revenue.

The study's findings assisted WSDOT with promoting and advocating for the protection and enhancement of the aviation system interests. The study provided suggestions on how WSDOT and other policymakers could use the results in regard to strengthening state legislation; preserving airport capacity; reviewing and ensuring adequate land use, accessibility, and mobility; the importance of rural airports; and the impact of costs, job growth, and diversity.

1.3.3 2013 (and prior) Airport Pavement Management System

Starting in 1999, with subsequent updates in 2005 and 2012/2013, WSDOT Aviation initiated an Airport Pavement Management System (APMS) to provide the airports, State, and Federal Aviation Administration (FAA) with information on the costliest piece of infrastructure in the aviation system, the pavement. Approximately every five years, WSDOT Aviation conducts a system-wide study of the relative condition of pavements for selected Washington airports. **The APMS serves as a tool to identify system pavement needs, shape programming decisions for federal and State grant aid, provide information for legislative decision making, and assist airport sponsors in making informed planning decisions.** The program also develops accurate pavement inventories and identifies necessary maintenance, repair,

rehabilitation and reconstruction projects. The APMS updates enable WSDOT Aviation and the FAA to make proactive, cost-effective, and strategic investments into the pavements at Washington's airports, and allows for effective communication with legislators, decision makers, and airports regarding the pavement needs at Washington airports.

1.3.4 2014 Airport Investment Study

WSDOT initiated a two-phased Airport Investment Study project to evaluate current funding levels for airport preservation and safety projects, assess short-term and long-term airport improvement needs, and determine the consequences of doing nothing relative to changing the investment in airports in terms of economic and aviation system impacts. Initiated in 2013, phase one included stakeholder meetings and concluded with the publication of a comprehensive report for future stakeholder reference. Phase two, also referred to as the Airport Investment Solutions Study, identified and analyzed potential solutions to meet Washington's aviation system needs.

The first phase of the Airport Investment Study found that the State's public-use airports needed $3.6 billion in projects during 20-year period from 2014-2034. The existing funding programs were not sufficient to meet the identified needs, with an estimated average of $8.4 million per year as the State's portion of the overall $3.6 billion in project needs. The second "Solutions Phase" reviewed potential strategies to address the shortfall and noted the potential consequences of not meeting the project needs. The study's solutions included both funding and nonfunding related approaches that benefit the aviation system and as many of its users as possible. The study provided WSDOT Aviation with feasible solutions and implementation strategies that WSDOT or other aviation stakeholders may leverage to address the statewide airport preservation and capital needs.

1.4 Report Layout

The remainder of the WASP is organized by chapter including the following:

- **Chapter Two: Goals, Objectives, and System Performance Measures**—This chapter identifies the aviation system's goals, objectives, and establishes performance measures for the airport system. The goals from this chapter are used throughout the WASP, serving as a cornerstone of the plan's elements.

- **Chapter Three: Inventory**—This chapter documents the existing airport system's conditions. In addition to airport infrastructure, the chapter provides information on aviation activities at the airports and provides a summary of Washington-specific state, regional, and local issues.

- **Chapter Four: Aviation Trends and Projections**—This chapter summarizes the national and Washington-specific trends in aviation demand that influence projections of future activity. Forecasts of demand through 2034 relative to commercial aviation, general aviation, and air cargo are also included. From enplanements at commercial service airports to based aircraft and operations at all airports and cargo at the existing airports with this activity, this chapter establishes the future demand projects for the airport system through 2034.

- **Chapter Five: Capacity Analysis**—This chapter examined the capacity of the system in terms of airfield, aircraft storage and parking, and air cargo facilities. The results of the analysis are used to inform potential alternative strategies and the policy recommendations of the WASP.

- **Chapter Six: Classifications and Airport Metrics**—This chapter evaluates existing classification systems and recommends a new classification system for Washington's airports. These classifications

are used in conjunction with the goals of the system to develop airport metrics, some of which are considered minimum standards and others are recommended minimums that airports should strive to achieve. An analysis of Washington's airports relative to current FAA National Plan of Integrated Airport Systems (NPIAS) criteria is also included.

- **Chapter Seven: Alternative Strategies**—This chapter provides insight and information related to strategies or options at the statewide, regional, and airport levels available to meet Washington's aviation needs. The chapter starts with identification of considerations related to key emerging issues from a statewide perspective. Analysis of regional activities and capacity concerns and accessibility of the system is provided to inform future decision making on the regional level. Finally, a process is proposed to develop airport alternative strategies for consideration by the airports, with examples provided based on working group input.

- **Chapter Eight: Multimodal Planning**—This chapter provides information on planning for multimodal connections between airports and other modes of transportation. Practical Solutions are identified, including policies and recommendations related to airport land use.

- **Chapter Nine: Policy Recommendations**—This chapter is the culmination of the WASP and summarizes the policy recommendations according to each of the goal categories. It also identifies a continuous planning process and potential studies for consideration to preserve the longevity of the WASP.

- **Appendix A: Acronyms**—A listing of acronyms utilized throughout the WASP is provided.

- **Appendix B: National, State, Regional and Local Emerging Issues**—This appendix is a compilation of the eight papers prepared on the emerging issues topics including:
  - B.1 Unmanned Aircraft Systems in Washington State
  - B.2 Aircraft Innovation
  - B.3 Preparing Airports for NextGen Implementation
  - B.4 Decline in General Aviation Activity
  - B.5 Contract Tower Funding Challenges
  - B.6 Aerospace Manufacturing
  - B.7 Aircraft Fuels
  - B.8 General Aviation Infrastructure Funding Challenges

- **Appendix C: Airport Classification Lists**—This appendix provides a summary of the airport classifications by associated city and by classification, by associated city.

- **Appendix D: Public Outreach Summary**—This appendix summarizes the public outreach efforts conducted throughout the WASP.